

Plan of Action - Spring Projects
Davis Creek Trail Marker Restoration Project

Group Members	Academy	History Class Period
Lloyd Gonzales	Engineering (Manufacturing)	2nd
Halak Patel	Engineering (Manufacturing)	5th
Jaime Garcia	Engineering (Welding)	2nd

Advisor Signature _____ Date: _____

Important Notes

- All months will involve the detailed documentation and photography of work, wherever possible.
- Estimates for the duration of work for each process involved with the project is extremely rough since we have not done extremely similar work to this project, so accurate time estimates are very difficult to develop. Regardless, *any* JSL-related work will be recorded.
- This plan of action assumes that the most ideal time for the installation of the new trail markers is around mid- to late-November. The established “deadline” is before Christmas break, because installation anytime after that is near-impossible because of the new deadlines for the completed JSL project (February, rather than closer to the end of the year).
- As expected, any problems that arise will be brought to the attention of our advisor, Mrs. Raker, and any other planning deemed necessary (that deviates from this plan of action) will be brought to the attention of our community partner, sponsors and supporters, or Engineering academy teachers. Advisor meetings will happen (at least) on a monthly basis.

September

Goals

- Arrange for transportation of pipes and already available materials to the AACT metals lab
- Begin contacting potential sponsors/supporters that can back the additional materials necessary to fabricate the trail markers (Truckee Meadows Parks Foundation, REI, Scheels and any other organizations that may be potential supporters)
- Create models in SolidWorks/AutoCAD for presentation/records, as well as technical drawings for future reference

- Create model for cut-out to be exported for use with the CNC machine (potentially proposing multiple, new cut-outs if determined viable)
- (If time and conditions permit, order materials)

Work Division

- Jaime will be our primary welder, performing most of the work when fabricating the trail markers. Although all of us have welding experience - the work does not necessarily need to be exclusive to just Jaime - he has access to the TMCC welding lab on a daily basis, and thus is the best member for welding the materials together.
- Halak will be most focused on the technical and manufacturing side of the work, creating an accurate model of the finished trail markers and developing mechanical drawings from the models. He will also be responsible for creating the models necessary for use with the CNC machine.
- Lloyd will be focused on contacting community partners and organizing the logistics necessary for the materials to be transported to the school as well as finding the funding for the additional materials necessary to fabricate the trail markers.
- All members have experience in both areas - manufacturing and welding - so splitting up the work is not necessarily limited to what is described above. The logistical aspect of the project can be split up evenly.

Estimated time, per person

- Jaime will likely need to be introduced to the machining needed to successfully fabricate the trail markers, particularly the lathe and bandsaw. Furthermore, he will likely need to practice welding angled pipe joints using the welding process determined to create the most durable weldments. As a result, regardless of whether or not the actual fabrication of the trail markers begins, a considerable amount of time will be spent developing a technique that can yield the best results.
- Halak and Lloyd can evenly split the manufacturing and logistical work. Developing the models for the trail markers may take some time, especially since detailed technical drawings will likely be necessary for the JSL portfolio. Developing several pinecone cut-out models for use with the CNC machine will take some time as well, and training with the CNC machine will take up additional time.
- The estimated time for all three members is likely between 10 - 20 hours, varying based on the availability of the welding, metals, and manufacturing labs.

October

Goals

- Complete the fabrication of the trail markers, possibly making an extra trail marker welded down to a bottom plate and additional trail markers of varying designs as artifacts for the JSL presentation
- (Order materials before fabrication if not already done)
- Use CNC machine for the cut-outs (and possibly the backing metal, if ideal)
- Begin achieving publicity - developing the website for JSL documentation, social media accounts, and promoting the project through community partners and other outlets

- Begin planning for the day of the installation and cleanup itself
- (Arrange for posters inside the school, promotion of the event through teachers, and liability waivers if necessary and if the installation event is deemed to be in early November)

Work Division

- As with September, Jaime will likely be focusing on the welding and machining aspects of the project and Halak and Lloyd will be focusing on the manufacturing and logistical aspects of the project. However, we will likely be working more as a group than individually compared to September to figure out the best method of fabricating the trail markers, so any non-specialized work (preparation, logistics, publicity, documentation, etc.) will be evenly split.

Estimated time, per person

- The machining and preparation of the materials will likely take some time, perhaps 4 to 7 hours. Anybody can machine and prepare the materials, as the AACT metals lab has both a lathe and a bandsaw as well as other necessary hand tools. Thus, the person with the least amount of relative work will take this up.
- As with before, Halak and Lloyd can split up the manufacturing and logistical work. Either one of them can focus on refining the CNC models based on the project's needs, and either one can focus on publicity and documentation. Website and social media development and maintenance (arranging photographs and documentation) will likely take 2 to 3 hours. Additional planning and communication for the event itself with community partners may take an additional 2 to 3 hours, and learning how to operate the CNC machine (and using it) may take 3 to 4 hours, depending on technical issues that may arise when exporting the models and the specifications that are best suited for the material that we have.
- Jaime will be welding together the trail markers, although the other members can try to help create tack welds or help with the welding process. The fabrication is expected to take between 8 to 15 hours, depending on how (or if) we decide to refine our process as we make each trail marker.
- *Because documentation and photography is very difficult to achieve when working alone and the documentation of this part of the project is **crucial**, we will almost certainly be working at the same time. This means that the division of work is likely to change as the project continues. We expect each person to put in roughly 10 to 15 hours of work.*

November

Goals

- Arrange for the transportation of the completed trail markers to the park itself (likely with the markers held in the ranger station until the day of the event itself).
- Ensure that any other potential logistical issues that have arisen or may arise have been solved.
- Begin extensive work for the event itself:

- Ensure that the event receives plenty of attention throughout AACT. Many underclassmen tend to wait until the final weeks of the semester to complete their volunteer hours (as we did), so we hope this event draws a fair amount of attention. This includes internal publicity through posters, Remind, and teachers (and ourselves, if possible) promoting this event during classes.
- Arrange for tools and other hardware to be available both for removing the old trail markers and installing the new ones. This includes shovels, gloves, wheelbarrows, etc. This will likely have to be arranged in advance through the park, so a good estimate of the number of attendees will be helpful (although, realistically, we will likely arrange for extra materials regardless of attendee number just in case).
- Arrange for snacks, water, and any sponsor-related materials to be available at a designated meeting spot.
- Ensure that any legal issues have been solved, particularly with regards to liability waivers and permission from other organizations for the event, if necessary.
- Attempt to arrange for parking exclusively for the event itself, as parking may be an issue if enough people are coming.
- Decide on the final locations for each trail marker.
- Establish a good date and time for the event, likely three or four hours in length on a day with decent weather.
- Determine our roles in the event itself (will we be taking photographs, overseeing the installation of the trail markers, or actually installing some markers ourselves?).
- Attempt to plan out the actual process of the event (will we gather everybody in once place, have them take some tools, and then have them split up? How will we get each individual trail marker completed?). We may take one or two extra visits to the park as a group to determine the best way to actually organize the installation.
- Decide on how volunteer hours will be signed for each volunteer will come.

Work Division

- Since all specialized work has been completed, only logistical and documentative work remain. Such work can be split up between each member as deemed necessary or ideal.

Estimated time, per person

- Documentation and photography work is likely to take roughly 2 to 3 hours, while maintaining our social media outlets and the website based on the rubric may take 2 to 4 hours. This is dependent on the amount of actual documentation we end up with and any rubric points that may become an issue.
- Logistical planning for the event and visits to the site itself may take 5 to 10 hours.
- The event itself will be 4 to 5 hours, depending on any pre- and post-event work necessary.
- Each person will likely spend around **at least** 10 hours each on the project overall, although this number is likely far lower than the time it will actually take to plan out the event - logistics, publicity, sponsors, and all.

December

Goals

- (If, for some unforeseeable reason the installation event has been moved to December, plan accordingly.)
- Finish communications with community sponsors and supporters, thanking them for their support and sponsoring them on social media outlets and the website as the organizations see fit.
- Arrange the website/digital portfolio based on the rubric into a near-finished state, including any writing or documentation necessary. This includes our service logs, personal reflections, and writing for community organizations (and any writing that the rubric requires).
- If not already achieved, ensure publicity in a magazine or newspaper article for the finished event occurs. Ensure that an original copy of the article is available to at least two group members.
- Obtain letters of recognition from community partners or other representatives as deemed necessary.
- Sign any volunteer papers.
- (We have been given the opportunity to present the project at an official organization that oversees park events. We expect to present this sometime after the event, probably in 2020, but we will both prepare for and present our project at one of the organization's meetings.)

Work Division

- As with December, since all specialized work has been completed, only logistical and documentative work remain. Such work can be split up between each member as deemed necessary or ideal.

Estimated time, per person

- Documentation and photography work is likely to take roughly 2 to 3 hours, while maintaining our social media outlets and the website based on the rubric may take 4 to 7 hours. This is dependent on the amount of actual documentation we end up with and any rubric points that may become an issue. Any final arrangements with community partners may take 2 to 5 hours. The work can be split evenly between all group members.
- We expect to begin practicing for our presentation at both AACT and the official organization during this time. The amount of time this will take is unclear.

January

Goals

- Fulfill the rubric points to the best of our ability in our presentations, digital portfolio, and binder.
- Present at the park organization's meeting.
- Continue practicing for the JSL presentation, refining how we discuss each topic if necessary.

- Attempt to arrange for our community partner, Park Ranger II Nick Steuer, to be present at our JSL presentation.

Work Division

- Any work at this point in the project will be evenly split and done as a group, not individually.

Estimated time, per person

- The time required to fulfill any remaining points in the rubric that we have not yet fulfilled and practice the presentation will vary.

February

Goals

- Perform our final presentation of the JSL project at AACT, along with the completed digital portfolio and binder.
- If the presentation at the meeting is sometime after February (for any reason), then present at the established time there, as well.

Work Division

- Any work at this point in the project will be evenly split and done as a group, not individually.

Estimated time, per person

- The time required to fulfill any remaining points in the rubric that we have not yet fulfilled and practice the presentation will vary.